

User Manual

Version 1.1
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Product name: Q Sepharose High Performance

Cat #: Qsep-100, Qsep-200, Qsep-300, Qsep-400

Description:

MCLAB Q Sepharose High Performance is cross-linked agarose beads that are modified with sulphopropyl (SP) strong anion exchange groups. The product is designed to obtain resolution and capacity through intermediate purification and polishing applications. It is often used in ion exchange chromatography, protein chromatography and anion exchange media.

Protocol:

1. Allow resin and 10 resin bed volumes (BV) of buffer to equilibrate to the room temperature for chromatographic run.
2. Mix the resin suspension with starting buffer to a ratio of 75% settled gel and 25% liquid.
3. Degas resin/buffer mixture under vacuum at room temperature for chromatographic run to prevent bubble formation in column.
4. Mount chromatographic column vertically and pour some buffer to rid air pockets.
5. Gently pour the prepared resin/buffer mixture down chromatographic column to carefully avoid bubble formation.
6. Connect an operable pump to column for reproducible separations.
7. Fill column with buffer to the rim and allow 5 BV to flow through column.
8. Once column is prepared with MCLAB Q Sepharose High Performance, apply or inject specific sample dissolved in starting buffer to the column. Sample volume should range from 1-5% of BV for isocratic separations. Low ionic strength medium and sample mass applied is more important than sample volume when gradient elution is used. Ion exchange chromatography can help concentrate or fractionate samples.
9. Elution: Starting buffer can be used for elution if clear separation of target samples is achieved. More often, gradient elution is applied for successful separation and elution. This is done by changing the pH and/or ionic strength of Elution Buffer to selectively decrease the affinity of molecules for the charged groups on the resin.
10. Regeneration: Wash resin with high ionic strength salt solution or with low and high pH to remove reversibly bound material. Lipids and precipitated proteins can be removed with sequential washing of 1 BV 1 M NaCl and then 1 BV 0.1 M NaOH in 0.5 M NaCl. Equilibrate resin column with starting buffer again and be sure to adjust pH of resin to neutral.

Recommended Cationic Buffers:

Alkylamines
Alcohol
Ammonium
Ethylenediamine
Imidazole
Tris
Pyridine

*pH of buffer ions should operate within 0.5 pH unit of buffer's pKa value